

REMARKS

Claims 1, 2, 4, 5, 14-21, 25, and 32 are withdrawn by the examiner. Claims 3, 6-13, 22-24, 26-31, 35-36, 38-52 and 54-58 are canceled without prejudice or disclaimer. Claims 33, 34, 37, 53 and 61 are amended for clarity, and applicants respectfully request withdrawal of the indefiniteness rejections. No new matter is introduced. Applicants appreciate the withdrawal of the rejections based upon Sigrist and Mooradian. The Office Action is discussed below:

Anticipation Rejection:

On pages 3-4 of the Office Action, the examiner has rejected the claims as anticipated by the Edwards article. Applicants respectfully traverse.

Applicants note that in order to reject a claim under 35 USC § 102, the examiner must demonstrate that each and every claim term is contained in a single prior art reference. *See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 90 (Fed. Cir. 1986); *see also* MPEP § 2131 (Rev. 6, Sept. 2007). Claim terms are to be given their plain meaning as understood by the person of ordinary skill in the art, particularly given the limitations of the English language. *See* MPEP §§ 707.07(g); 2111.01 (Rev. 6, Sept. 2007). Claims are to be given their broadest reasonable interpretation consistent with applicants' specification. *See In re Zletz*, 13 USPQ2d 1320, 1322 (Fed Cir. 1989) (holding that claims must be interpreted as broadly as their terms reasonably allow as defined or used by applicants); MPEP § 2111 (Rev. 6, Sept. 2007).

Not only must the claim terms, as reasonably interpreted, be present, an allegedly anticipatory reference must enable the person of ordinary skill to practice the invention as claimed. Otherwise, the invention cannot be said to have been already within the public's possession, which is required for anticipation. See *Akzo, N.V. v. U.S.I.T.C.*, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986); *In re Brown*, 141 USPQ 245, 249 (CCPA 1964). Applicants review below the reference with these concepts in mind.

The article by Edwards *et al.* is entitled "Conjugation and modeled structure/function analysis of lysozyme on glycine esterified cotton cellulose-fibers", and discloses immobilizing lysozyme by covalently bonding lysozyme to glycine-derivatized cotton cellulose. Edwards, however, is fundamentally different than the presently claimed invention.

Edwards concerns the functionalization of cellulose with glycine by applying a multistep procedure including the following chemical reaction steps:

Step 1: Acylation of cellulose,

Step 2: F-Moc glycine esterification,

Step 3: Acetylation of F-Moc glycine esterified cellulose,

Step 4: Deprotection of F-Moc glycine esterified cellulose,

Step 5: Coupling and deprotection of the second glycine to form a Gly-Gly bond,

Step 6: Carbodiimide activation of a carboxyl group of lysozyme, and

Step 7: Coupling of the "activated" lysozyme to glycine esterified cellulose.

Importantly, the product which results from Edwards is a lysozyme-functionalized cellulose in which the linking agent is non-cleavable. There is no known enzyme which can recognize and hydrolyze the Gly-Gly bond that in Edwards is esterified on one side to cellulose and on the other side, linked via an amide bond, to an aspartic acid side chain in the lysozyme. It is therefore evident that the Edwards product is not only chemically distinct, but also cannot function as recited in presently claimed invention where the non-linker molecule can be cleaved under predetermined conditions at a cleavage site in the linker molecule. As the non-linker molecule may have any one of many functionalities (see claim 37 and claim 61), these differences can be significant for downstream applications. Thus, Edwards does not provide a product that has the same capabilities as the product provided by the present invention.

Additionally, Edwards does not disclose a carbene-generating linker molecule. This linker molecule functionality is important as it allows much easier production as compared with the Edwards method steps noted above. In the present invention, a one step procedure may be employed due to the presence of the carbene-generating linker molecule. This procedure involves bringing the non-linker molecule (for example, lysozyme) into molecular contact with the carbene-generating linker molecule and the selected yarn or textile product. Chemically reactive species (carbenes) are formed (for example, thermochemically or photochemically, as recited in claim 34) and covalent chemical immobilization of the non-linker molecule onto the yarn or textile product is effected. This happens because the reactive species of carbene-generating linker molecule undergoes covalent insertion reactions with both the non-linker molecule and the yarn or textile product. Therefore, in addition to the presently claimed article being


novel *per se* over Edwards for the above reasons, many novel features of the invention provide advantages over the prior art as these features allow an improved process for production of the product.

Given the above distinctions, applicants submit that Edwards does not meet the limitations of the claims, and does not enable the practice of the claimed invention. Accordingly, the rejections should be withdrawn.

REQUEST

Applicants submit that the claims are in condition for allowance, and respectfully request favorable consideration to that effect. The examiner is invited to contact the undersigned at (202) 416-6800 should there be any questions.

Respectfully submitted,



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